Briefing for Lori Cohen
Background and Status of Quendall Terminals
27 September 2007

BACKGROUND--Based on Ecology Deliverables

The Site: Quendall Terminals is a 23-acre property is located on the eastern shore of Lake Washington in Renton, WA.

It is a former creosote manufacturing operation. The Republic Creosote Company (later called Reilly Tar and Chemical) refined and processed coal tar and oil-gas tar residues for about 53 years, 1917 until 1969. These operations resulted in releases of coal tars and creosote to the soil, groundwater, surface water, and lake sediments. The primary chemicals of concern are carcinogenic poly-aromatic hydrocarbons (PAHs) and benzene in soil and groundwater.

In 1971, the site was sold to Quendall Terminals, a joint venture of J.H. Baxter and Company and Altino Properties, Inc. Between 1969 and 1978, the site was used intermittently to store crude oil, waste oil and diesel. It has been used as a log sorting and storage yard since 1977. The log sorting tenant is being evicted.

The Operation: The creosote manufacturing facility refined and processed coal tar and oil-gas tar residues. (Figures 2-2)

- The tars consisted of PAH compounds, phenolic compounds, light aromatic compounds (including benzene, toluene, and xylenes) and other organic compounds.
- The tar was purchased from the Seattle Gas Company on Lake Union and others was shipped or barged to the site and pumped through transfer lines that ran along a former wharf and pipe trestle.
- The docks included a long T-dock and the southern pier dock which were used for offloading tankers and barges.
- From the docks, transfer lines ran to two 2-million gallon storage tanks located in the west central tank farm area.
- The tanks contained heating elements to keep the liquid warm, thus allowing it to be transferred to the still house where the tars were refined to produce creosote and distillates.
- Tar distillates were further refined to produce naphthalenes, xylenes, benzene, toluene mixtures and other organic products. These products were then stored in onsite tanks until shipment.
- All of the buildings except for the office building have been removed from the property. (Figure 2-1)

- The property is currently being used for log sorting and storage.

- May Creek flows along the southern border of the site, although it originally flowed through the site.

The Regulatory History: In 1993, the Department of Ecology negotiated an Agreed Order with the PLPs (Baxter and Cigini) for Quendall Terminals to complete a remedial investigation and risk assessment. A Remedial Investigation (RI) report was completed by the PLPs in 1997. Shortly after the RI report was finalized, the City of Renton expressed that they were interested in purchasing the property. They were considering entering an arrangement with Vulcan Northwest to redevelop the site. Vulcan conducted an RI and focused Feasibility Study as did the City of Renton.

In 2003, Ecology was informed that the City of Renton was no longer interested in purchasing the property.

The Department of Ecology resumed negotiations with the PLPs in 2004 to complete the risk assessment and feasibility study in accordance with the 1993 Agreed Order.

In 2004, the PLPs submitted a revised Risk Assessment and Feasibility Study document. These documents were not finalized before Ecology transferred oversight for the cleanup to EPA.

All previous work done under the Agreed Order will be considered by EPA in developing steps for future cleanup of the site.

The Recent Zoning

The site was originally zoned for industrial uses. In the late 1990s, the City of Renton later zoned this property and the surrounding properties as "Commercial/Residential.".

Quendall Terminals is allowed to continue using the property for existing uses; however, they may not change or expand the existing operation.

The Nature and Extent

- **Hazardous waste sources and releases**

  - Discharges from the facilities resulted in the release of coal tars and creosote to the soil, groundwater, surface water and sediments.

  - In an inspection report dated 1946, the Pollution Control Commission noted "A tank car was noticed on a trestle directly above a creek bed, tributary to Lake Washington, and from all appearances many spills have occurred here in the past, especially during hose connections from the tank car to the storage tanks."

- Spills around the still house and the sewer line outfall that lead from the still house and discharged into a former drainage bed in the south site area

- Leaks around the tank farm. These tanks had no containment, early reports state that the ground was saturated with coal tar.

- Waste materials (still bottoms and tank cleaning wastes) were reportedly deposited in the area to the north of the tank farm.

- Sump and sewer drain field. During operation of the facility wastewater and other wastes were discharged to sump in the north area of the site and then discharged to Lake Washington

- Spills from barges that occurred while unloading coal tar material at the piers. In 1937, it was reported that 30,000 to 40,000 gallons of tar spilled into the lake off the end of the T-dock.

- Waste materials were reported to be deposited in the original creek bed of May Creek.

- **PCOCs:** The primary chemicals of concern are PAHs and BTEX compounds, principally the carcinogenic PAHs and benzene. In addition, wood waste resulting from years of log storage at the site and on the lake has impacted the site and lake sediments. **(See Table 3-2).**

- **Dense Non-Aqueous Phase Liquid (DNAPL)** was encountered consistently in a number of monitoring wells in the shallow aquifer around the site. In the area to the north of the old tank farm and around the pond used for surface water management the DNAPL in has ranged from 4 to 6 feet thick. Most of the DNAPL that has been found is located in the top 20 feet of soil and is found below the water table.

  The DNAPL at the Quendall Terminal site appears to be creosote or another coal tar product. Creosote and coal tar are mixtures of PAHs (80-85%), phenolic compounds (10%) and heterocyclic compounds (5%). Coal tar also typically contains 1-5% BTEX compounds. **(See Figure 2-3)**

- **Contaminated soil** is present throughout the majority of the property. The depth of contamination varies but has been documented as deep as 19 feet below ground surface. Many contaminants exceed MTCA cleanup levels for direct contact. Soil contaminants include: benzo(a)anthracene, benzo(a)pyrene, benzo(b)-fluoranthene, chrysene, naphthalene, and benzene.

  Several heavy metals including arsenic, lead and mercury are also present in onsite soils. There is also a lot of wood waste found throughout the site. **(See Figures NE 2-5)**

- **Groundwater** at the site was also found to be contaminated with PAHs, phenols and BTEX. Elevated levels of contaminants were found throughout the site, but were particularly high in the area north of the old tank farm and around the pond used for surface water management. Naphthalene was the most prevalent noncarcinogenic PAH; Benzo(a)pyrene was the most prevalent carcinogenic PAH. **(See Figures NE 6-7)**

  High concentrations of PAHs were also found in a well located approximately 30 feet offshore in an area containing creosote contaminated sediments. The highest concentration of benzene (30,000 ppb) was found in the offshore monitoring well. Because the contaminant concentrations of all of these compounds were higher in this well than in the adjacent upland wells, it is possible that an offshore source may exist.

  There is concern that benzene has been mobilizing the heavier creosote compounds in groundwater. There is also concern that onsite ground water is transporting contaminants and discharging them into Lake Washington. Several seeps were observed along the shoreline. Contaminants in water samples collected at these seeps included benzo(a)pyrene, benzo(b)-fluroanthene and benzene.

- **Sediment contamination** was reported in Total PAHs. Areas of highest concentrations were found in the area at the end of the T-dock, which is approximately 700 feet off shore, and closer to the shore (less than 200 feet) along the T-dock and the south pier. **(See Figures NE 8-10)**

- **CSM**

  - For Fate and Transport see Figures X-1 and PC-2

  - For Human Health see Figure X-2

  - Recreational fishing occurs off-shore from the site, and there are two swimming beaches within one half mile of the property. This area of Lake Washington is also considered prime habitat for rearing of juvenile salmonid stocks, including federally-threatened Chinook.

- **PLP Recommended Remedy**

  - Source control by removing recoverable DNAPL from the subsurface to the extent possible.

  - Exposure to contaminated media would be controlled by installing a reactive cap and implementing institutional controls

  - Hydraulic controls would be implemented to enhance cap performance by controlling surface water accumulation and perched groundwater mounding in the Quendall pond area and preventing potential localized sheen discharges along the shore line.

  - Monitoring would document natural recovery of site soils, groundwater, and sediments..

Assumes that subsurface characterization of the nearshore area indicates that DNAPL in the off-shore area is contained or isolated by low permeability peaty-silt deposits which effectivity limit further lateral movement to the lake. Pilot run as part of the remedy with a contingency.

Activities Under CERCLA

- AOC signed, Special Account and Special Notice Letters to Baxter, Cigini and Riley
- Plan to send 104(e)s to Baxter, Cigini and Riley
- Schedule is being revised

Activities to Date

- Site access and control – signage; also met with Seahawks and Connor
- Community Outreach
- Approved Summary of Data and Quality Report – validated all data since 1995
- Draft CSM, RARA, PRGs, RAO, and Data Gaps via DQO process due in November 2007
    - Looking for ways to expedite the process
        - Limit number of alternatives evaluated based on experience and similar sites.
        - Evaluate alternative earlier in process to help focus data collection
        - Triad approach and calling on support from COE
        - Use of working meeting
        - Using third party to evaluate natural recovery now

Issues and Concerns:

- Nature and Extent not Defined and Use of Ecology Data
- Dry docks
- Liability and Ability to Pay
- Community and Neighbors
- Development Plans
- Liability and Ability to Pay
- Wood waste